```
ANSWER 1 OF 4 CAPLUS COPYRIGHT 2000 ACS
L15
      1999:451303 CAPLUS
ΑN
DN
      131:73842
ΤI
      Process for preparing carboxamido-4-azasteroids
IN
      Panzeri, Achille; D'Anello, Matteo; Longo, Antonio; Nesi, Marcella
PA
      Pharmacia & Upjohn Spa, Italy
SO
      PCT Int. Appl., 24 pp.
      CODEN: PIXXD2
DT
      Patent
      English
LA
FAN.CNT 1
      PATENT NO.
                         KIND
                                 DATE
                                                  APPLICATION NO.
                                                                      DATE
                                                  -----
PΙ
     WO 9935161
                         A1
                                19990715
                                                 WO 1998-EP8527 19981217
          W: AL, AU, BA, BG, BR, CA, CN, CZ, EE, HU, ID, IL, JP, KR, LT, LV, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TR, UA, US, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
          RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
               CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                                  AU 1999-25146
     AU 9925146
                          A1
                                19990726
                                                                      19981217
     EP 970105
                          A1
                                 20000112
                                                  EP 1998-966861
                                                                      19981217
          R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI
     NO 9904199
                          Α
                                 19991029
                                                  NO 1999-4199
                                                                      19990830
PRAI GB 1997-27522
                          19971231
     WO 1998-EP8527
                         19981217
OS
     CASREACT 131:73842; MARPAT 131:73842
GΙ
```

AB A process for producing azasteroids of formula I [R, Rl = H, (fluorine substituted) alkyl, (fluorine substituted) phenylalkyl, etc.; R2 = H, (fluorine substituted) alkyl; R3 = H, absent] comprises treating the corresponding 17.beta.-carbonylimidazole intermediates with anhyd. acids in the presence of an amine and, optionally, hydrogenating the resulting compd. Thus, 3-oxo-4-azaandrost-5-ene-17.beta.-carbonyl-1-imidazole was reacted with 1,1,1,3,3,3-hexafluoro-2-phenylprop-2-ylamine and methanesulfonic acid to give II.

IT 129273-17-2P 229183-12-4P

Searched by John Dantzman

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. of 17.beta.-carboxamido-4-azasteroids)
129273-17-2 CAPLUS

1H-Imidazole, 1-[[(4aR,4bS,6aS,7S,9aS,9bS,11aR)-2,4a,4b,5,6,6a,7,8,9,9a,9b,10,11,11a-tetradecahydro-4a,6a-dimethyl-2-oxo-1H-indeno[5,4-f]quinolin-7-yl]carbonyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN

CN

RN 229183-12-4 CAPLUS

CN 1H-Imidazole,

Absolute stereochemistry.

```
ANSWER 2 OF 4 CAPLUS COPYRIGHT 2000 ACS
AN
     1994:457781 CAPLUS
DN
     121:57781
     Fluorinated 17.beta.-substituted 4-aza-5.alpha.-androstan-3-one
TI
     derivatives useful as testosterone 5.alpha.-reductase inhibitors, and
     their preparation
IN
     Panzeri, Achille; Nesi, Marcella; Di Salle, Enrico
PA
     Farmitalia Carlo Erba S.R.L., Italy
SO
     PCT Int. Appl., 70 pp.
     CODEN: PIXXD2
DT
     Patent
LA
     English
FAN.CNT 1
                        KIND DATE
                                               APPLICATION NO.
     PATENT NO.
                                                                  DATE
     _____
                        ----
                              -----
     WO 9403475 A1
                              19940217
PΙ
                                             WO 1993-EP2037 19930729
         W: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD,
         SE, SK, UA
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG
     CN 1085224
                              19940413
                                              CN 1993-109305
                                                                  19930729
                         Α
     CN 1041096
                         В
                              19981209
     ZA 9305481
                         Α
                              19940516
                                               ZA 1993-5481
                                                                  19930729
     EP 607400
                         A1
                              19940727
                                               EP 1993-917705
                                                                  19930729
     EP 607400
                         В1
                              19971105
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, NL, PT, SE
     HU 67043
                         A2
                              19950130
                                               HU 1994-914
                                                                  19930729
     AU 660562
                         В2
                              19950629
                                               AU 1993-47048
                                                                  19930729
     AT 159951
                                               AT 1993-917705
                         Ε
                              19971115
                                                                  19930729
     IL 106520
                              19971120
                                               IL 1993-106520
                         A1
                                                                  19930729
     ES 2110620
                         Т3
                                               ES 1993-917705
                              19980216
                                                                  19930729
     NO 9401080
                        ·A
                              19940518
                                              NO 1994-1080
                                                                  19940324
     FI 9401424
                              19940527
                                              FI 1994-1424
                         Α
                                                                  19940328
PRAI GB 1992-16284
                        19920731
     WO 1993-EP2037
                        19930729
OS
     MARPAT 121:57781
GI
```

Ι

ΙI

AB Title steroids I [B = bond, straight or branched C1-C6 alkylene; R = H, C1-C4 (fluoro)alkyl; R1 = H, C1-C6 (fluoro)alkyl, benzyl; R2 = (a) H, F, C1-C6 (fluoro)alkyl, C5-C7 cycloalkyl, C6-C9 cycloalkylalkyl; or (b) (un)substituted aryl or C7-C10 arylalkyl; R3 = (a) H, F, C1-C4 (fluoro)alkyl; or (b) (un)substituted aryl or C7-C10 arylalkyl; R4 = H,

or is absent when A is bound by double bond; R5 = H, F, C1-C6 (fluoro)alkyl; A = H, F, CR6R7R8, :CR6R7; R6, R7, R8 = H, F, C1-C6 (fluoro)alkyl; with the proviso that .gtoreq. 1 of groups R-R5 or A contains .gtoreq. 1 F atom], including 44 specifically named compds., are claimed, and several example prepns. are given. For example, S-(2-pyridyl) 3-oxo-4-aza-5.alpha.-andros-1-ene-17.beta.-carbothioate was treated with MeI in CH2C12 and then with (.+-.)-PhC(Me)(CF3)NH2 in DMF, and the mixt. was heated at 100.degree. for 8 h to give title compd. II. At 3 mg/kg/day orally, II gave 54% inhibition of testosterone-induced prostatic hypertrophy in castrated rats. Three std. pharmaceutical formulations are described.

IT 155651-63-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. and redn. of, in prepn. of antiandrogens)

RN 155651-63-1 CAPLUS

CN 1H-Indeno[5,4-f]quinoline-7-carboxamide,

2,4a,4b,5,6,6a,7,8,9,9a,9b,10,11,

Absolute stereochemistry.

Searched by John Dantzman

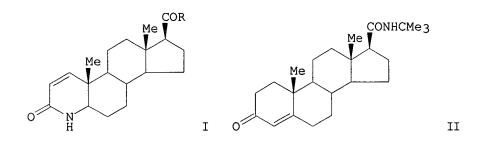
308-4488

CASREACT 114:164608

os

GΙ

ANSWER 3 OF 4 CAPLUS COPYRIGHT 2000 ACS L15 1991:164608 CAPLUS ΑN DN 114:164608 Acylimidazolides as versatile synthetic intermediates for the preparation ΤI of sterically congested amides and ketones: a practical synthesis of Proscar ΑU Bhattacharya, A.; Williams, J. M.; Amato, J. S.; Dolling, U. H.; Grabowski, E. J. J. CS Process Res. Dep., Merck Sharp and Dohme Res. Lab., Rahway, NJ, 07065, USA SO Synth. Commun. (1990), 20(17), 2683-90 CODEN: SYNCAV; ISSN: 0039-7911 DT Journal English LA



AB Acylimidazolides, e.g., I (R = 1-imidazolyl) react with magnesium amides to produce carboxamides in excellent yields, whereas Fe(III) catalyzed cross coupling between acylimidazolide and Grignard reagents produce ketones in high yields. These methods were utilized to prep. the .alpha.-reductase inhibitor Proscar I (R = NHCMe3), as well as various 17.beta.-amides, e.g., I (R = NEt2, NHR1; R1 = cyclohexyl, 2-adamantyl) and II, and ketone analogs I (R = sec-Bu, iso-Bu, iso-Pr, cyclohexyl) of .DELTA.1-4-aza-5.alpha.-androsten-3-one.

IT 129273-17-2

RL: RCT (Reactant)

(condensation of, with Grignard reagents, amides and ketones from)

RN 129273-17-2 CAPLUS

CN 1H-Imidazole, 1-[[(4aR,4bS,6aS,7S,9aS,9bS,11aR)-2,4a,4b,5,6,6a,7,8,9,9a,9b,10,11,11a-tetradecahydro-4a,6a-dimethyl-2-oxo-1H-indeno[5,4-f]quinolin-7-yl]carbonyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

```
L15 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2000 ACS
ΑN
     1990:532584 CAPLUS
DN
     113:132584
TI
     Preparation of 4-azo-chol-1-ene-3,20-dione derivatives as testosterone
     reductase inhibitors
    Bhattacharya, Apurba; Dolling, Ulf H.; Amato, Joseph S.; Williams, John
ΙN
Μ.
PA
    Merck and Co., Inc., USA
    Eur. Pat. Appl., 13 pp.
SO
     CODEN: EPXXDW
\mathsf{DT}
     Patent
LA
    English
FAN.CNT 1
     PATENT NO.
                    KIND DATE
                                        APPLICATION NO. DATE
     -----
                    ----
                          _____
                                         ______
    EP 367502
PΙ
                     A1
                          19900509
                                        EP 1989-311066
                                                         19891026
                    B1 19950913
    EP 367502
       R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE
    US 5237061 A 19930817
                                        US 1988-264652
                                                         19881031
    CA 1326013
                     Α1
                          19940111
                                         CA 1989-615350
                                                         19890929
     JP 02172999
                     A2
                          19900704
                                        JP 1989-275124
                                                         19891024
    JP 07014959
                    B4
                          19950222
    ES 2078909
                     T3 19960101
                                        ES 1989-311066
                                                         19891026
    DK 8905395
                          19900501
                                        DK 1989-5395
                     Α
                                                         19891030
    DK 170734
                    B1 19951227
PRAI US 1988-264652 19881031
OS
    MARPAT 113:132584
GI
```

AB The title compds. [I; R = (hydroxy-, carboxy-, or alkyl ester-substituted)C1-12 alkyl, cycloalkyl, Ph, OH, alkoxy, PhCH2O, NH2;

R1 = H, Me, Et; dotted line = optional double bond], useful as testosterone 5.alpha.-reductase inhibitors (no data), were prepd. by treatment of imidazolides II with Grignard reagents or with amines in the presence of Grignard reagents. Thus, 3-oxo-4-aza-5.alpha.-androst-1-ene 17.beta.-carboxylic acid in CH2Cl2 was treated with carbonyldiimidazole over 20 min and the mixt. was stirred an addnl. 20 min to give 91.5% of the corresponding carbonylimidazole. The latter, in THF at -40.degree., was treated with MeCH2CHMeMgCl; Fe(acac)3 in THF was then added at -15.degree. to give 58.3% azanorcholenedione III.

IT 129273-17-2P

RN 129273-17-2 CAPLUS

CN 1H-Imidazole, 1-[[(4aR,4bS,6aS,7S,9aS,9bS,11aR)-2,4a,4b,5,6,6a,7,8,9,9a,9b,10,11,11a-tetradecahydro-4a,6a-dimethyl-2-oxo-1H-indeno[5,4-f]quinolin-7-yl]carbonyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.